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ORIGINAL COMMUNICATIONS.

ARE VARICOSE VEINS A CAUSE OF POST PARTUM HŒMORRHAGE?

By J. W. BROOKS, M. D., Chicago.

If the following suggestions are novel, they may not be wanting in utility, should they lead to a more thorough investigation, of post partum hœmorrhage, as connected with varicose, of the uterus, uterine appendages and lower extremities. At this point we may very properly take a brief glance at the venous anatomy of the uterus, and then follow with cases illustrative.

The veins of the gravid uterus are numerous and much dilated and flattened like sinuses, the largest of them are termed sinuses. They consist of the usual lining membrane of the venous system surrounded by the muscular fibres of the uterine parenchyma which invest them as a second coat. They are arranged in several planes, and those of each plane have frequent anastamoses with each other, whilst those of one plane inosculate with those of another plane, forming a grand venous network.

There is this anatomical peculiarity in the venous system of the uterus: Many of the veins open upon the internal surface of the uterus by well defined orifices. They transfix this surface very obliquely with valves at their orifices, which are especially numerous and large upon that portion of the uterine surface to which the placenta is attached.

The only valves belonging to the uterine venous system so far as the writer is aware, are those at the orifices, and those at the points of inosculation, between the veins of the different planes. We believe with Prof. Owens, that "the foramen by which a venous tube communicates with another lying immediately beneath it, in the uterus, is not in the sides, but in the floor of the superficial vein, and working down in it from above." We see the canal of the vein below partially covered by a semi-lunar falciform projection, formed by the lining membrane of the two venous tubes as they meet at a very acute angle, the lower tube always opening very obliquely into the upper. That these valvular arrangements, by obstructing the retrograde movement of the venous blood, operate efficaciously in preventing uterine hœmorrhage, cannot be doubted, in the various exigencies of pregnancy and parturition. Let a varicose condition of these veins exist, and what will be the inevitable consequence? The answer will be found by ascertaining after a fatal case of post partum hœmorrhage attended with varicose veins, the condition of the veins and sinuses, together with the condition of the valvular orifices and the valves at the points of inosculation.

Especially will the case appear clear if the placenta has been attached, so as to involve part of the healthy and part of the varicose side.

From several cases that have occurred to the writer, we will present three as representative ones:

Case 1st—Was called in consultation with Dr. F., June 11th, 1851, to Mrs. F——n, in consequence of post partum hœmorrhage. Found her in articulo mortis on arrival, breathing but a few times, labor having been terminated

about one hour previously, the child a male, healthy. The history of the case as derived, was briefly this: The lady was married at twenty, and was at the time thirty-eight years of age. She had borne eight children previously, and enjoyed uniformly good health. Her labors had been comparatively easy and she had hitherto made good recoveries. The present labor had lasted about three hours, without unusual occurrence, till after the delivery of the placenta, when the blood flowed profusely and persistently; cold applied externally not checking it, and the uterus meantime alternately contracting and relaxing. Sectio. Cadaver, thirty-six hours after death. Body was well formed and developed, ex-sanguine. There were large varices extending from the foot to the inguinal region of the right side. Rigor Mortis was complete. On opening the abdomen the parts were normal, if we except the ex-sanguiousness, and the uterus: This was not fully contracted, and a marked difference existed in the two lateral halves. On the external part of the right side, embracing the right appendices uteri, the veins appeared much as they did in the labia externa and through the right lower extremity. Dividing the uterus on the mesian line, we found the placenta had been attached about equally on either side of the mesian line. The veins of the left side seemed in a healthy condition, the valves normal, and small coagula were found within the valves where the placenta had been attached. Not so the right side: Here the veins and sinuses appeared from twice to four times the size of the corresponding ones of the opposite side. The valves where the placenta had been attached were almost entirely effaced. There was scarcely a coagulum within the veins or sinuses. The valves at the points of inosculation between the planes were similarly diseased, while the veins appeared like the other varicose veins. The heart and other organs were perfectly healthy.

Case 2nd—Was called to Mrs. C———, March 10th, 1855. Found Dr. O——r in attendance. The child, a fine healthy girl, had been delivered about one hour and ten minutes. Dr.

O. reports flooding as having commenced soon after the birth of the child. It continuing, he depressed the head, elevated the pelvis, and applied cold to the uterine region without apparent good result. Alarming prostration supervened, upon which he introduced a piece of ice, enclosed in an oiled napkin with no relief. On my arrival death was evidently near. The veins of right leg, the mesh below Poupart's ligament and those of the right labia were almost universally in a varicose state. We attempted the use of solution of Sulphate Ferri as a styptic locally, but with very little result. Life was ebbing rapidly, and in just twenty minutes from my reaching the bedside she ceased to breathe.

The following brief history of the case was gleaned: She was married at 24, and was at the time 35 years of age. She had never seen a sick day except very slight indisposition attending five previous confinements with living healthy children. The first notice of varicose veins was during her fourth pregnancy, but there was no hœmorrhage during or after labor more than ordinarily attends. During the fifth the varices were much larger, but the labor was easy and the recovery good. During the sixth the varices were still increased, especially near the inguinal region, and she complained of a constant uneasiness in the right abdominal region, and her expression was that she had the same feeling in it that she had in the varicose veins below. In all other particulars she felt well.

Sectio. Cadaver, 30 hours post abeit. A beautifully developed female form presented, ex-sanguious. Traces of the varices were still to be seen on the limbs, &c. On opening the abdomen the appearances were nearly a fac simile of Case 1st. On section of the uterus we found the placenta had been three-fourths of it attached on the right side. To describe the appearances of the valves, sinuses, &c., would be to repeat what has already been described in the preceding case. Other than this every thing appeared perfectly healthy.

Case 3rd—Mrs. E——— was at the period spoken of 41

years of age and had been always delicate, and is of a nervo-sanguine temperament. She had borne nine children. During her eighth pregnancy some varices appeared on the right leg, and extended to a point just below Poupart's ligament, and involved the veins of the right labia. Her labor was natural, no unusual hœmorrhage attended and she made a good recovery. So also was the case in the ninth period of gestation and accouchment. She conceived again in May, 1858. In August was called to see her in consequence of her experiencing dull pain, deeply seated in the right inguinal region, and extending from thence downward, through the right side of the vagina, the right labia, and thence to the ancle. She says the pain is greatly relieved by the recumbent posture. On examination small varices were found just above the right malleolus externus, at and just below the popliteal region, on the outside of the thigh at the junction of the lower and middle third of the femur, in the fold below Poupart's ligament, between the right external labia and the thigh, in the right labia, and in the venous system of the right side of the vagina, with a knotty feel of the right side of the neck of the uterus. She was enjoying her ordinary health. Directed a flannel bandage one and a half inches wide to be applied to the limb before rising in the morning, to exercise moderately, and to recline a part of the time during the day. In November was called again. She then stated that she had found much relief by the course prescribed. She was at this time suffering from a sensation of weight and tenderness in the right abdominal region, and spoke very positively of her belief of its location in the womb, and that her child was on the other side.

Stethescopic and tactile examination soon convinced me that the placenta was attached on the right lateral half of the uterus. The sounds observed were peculiar, and not easily described. Fearing diseased valves and varicose veins, I directed her exercise to be gentle, her diet mild, with instructions to recline often, with the request to be summoned to her

side on the first intimation of labor. If labor occurred with hœmorrhage, that her hips be raised and her head depressed. Labor commenced in accordance with her reckoning, Feb. 10th, 1859. Every thing progressed favorably until after the birth of a son, when moderate hœmorrhage commenced. The placenta remaining and little or no contraction of the uterus having taken place, we dropped the head and elevated the pelvis and extremities, and then tried to induce contraction by the application of ice to the hypogastrium, and at intervals grasping the uterus through the abdominal parieties. These means partially abated the hœmorrhage. In thirty minutes from the delivery of the child syncope approached and alarming prostration. I directed an assistant to compress the abdominal aorta, and proceeded to deliver the placenta, which was found abnormally attached to the right side of the uterus. On separating the attachment the hœmorrhage was fearful. The orifices of the bleeding vessels were manifest to the feel. With the withdrawal of the placenta the uterus contracted briskly and then relaxed, continuing alternately to contract and relax until in the course of twenty minutes it assumed near a normal size, with little wasting. Pressure was continued fifteen minutes longer, and then was very gradually removed.

She was retained in the above position for twenty hours, at the expiration of which time, the head and pelvis were brought to the same level. She made from this time a gradual, but finally a good recovery, and at this time, January, 1864, enjoys comfortable health. She has always a painful sensation of weight and fulness on the right portion of the uterus, &c., during and for one or two days previous to the catamenial flow. This discharge still being regular at the month.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,

Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon of the Chicago Charitable Eye and Ear Infirmary.

THE OPHTHALMOSCOPE.

Gentlemen: We have before us in the clinic to-day three patients, affected with various diseases, of which it is impossible to make an accurate diagnosis without the assistance of the ophthalmoscope. Before concluding what I wish to say upon diseases of the conjunctiva, I shall ask your attention to some of the principal points in the subject of ophthalmoscopic. You are aware there are two reasons, why it is impossible without the aid of some such instrument as the ophthalmoscope, to obtain a view of the deeper portions of the eye. 1st, On account of the smallness of the pupil, but little light can enter the eye. As nearly all of this is absorbed by the pigment of the choroid, a minute quantity of light only is reflected back through the pupil into the eye of the observer. The conditions are nearly the same in an attempt to look into a dark room through a small aperture in the shutter. Objects behind the iris, as also behind the shutter, are indistinct, or invisible, because they are insufficiently lighted. 2d. The refracting media of the eye so change the direction of the rays of light, as they pass from within out through the pupil, that they cannot meet at a focus on the retina of the observer. As the presence of a double convex lens in the aperture of the shutter, just mentioned as an illustration, increases the difficulty of looking into the room. Now if a piece of looking glass, from the centre of which a small disk of the amalgam has been removed, be placed near the opening in the shutter in such a way, that the light of the sun shall be reflected

through this opening, the rays will fall upon the opposite wall. A person placing his eye behind the center of the reflector can plainly see those portions of the room upon which the light from the glass is thrown.

To throw sufficient light into the eye, so as to illuminate its internal structures and at the same time to so direct, by means of lenses, the rays as they pass back from those structures through the pupil, that they will form an image on the retina of the observer, are the objects of the Ophthalmoscope.

It consists of a small concave mirror with an opening in the centre and a semicircular frame behind it for holding such lenses as the peculiarities in the refracting media of the patient or observer may require. The instrument is used in the following manner: The room being darkened and a lamp with sufficiently strong light being brought near the patient's ear, the observer places the centre of the mirror directly before his own eye and inclines the mirror in such a way, that the rays of light from the lamp will be reflected into the pupil of the patient. It is usually necessary that the eye of the observer should be six to fourteen inches from that of the patient, the distance varying according as the patient or observer is far or near sighted. In this way an erect image of the retina can be obtained, so much magnified that but a small part of it can be seen at once. A slight movement of the instrument perpendicularly or horizontally will bring different portions of the retina into view. In order to examine a large portion of the retina at a glance it is necessary to use the mirror without a lens behind it, substituting a double convex lens of two or three inch focus, held between the mirror and the eye of the patient and very near the latter. It should be remembered that it is generally necessary to dilate the pupil of the patient by instilling a few drops of solution of neutral sulphate of atropine, gr. iv and aquæ ℥j, into the eye ten or fifteen minutes before making an examination. The study of the progress and effects of disease of the different tissues of the eye, as revealed by the opthalmoscope, is one of the most

intensely interesting subjects in ophthalmic science. To acquire perfect facility in its use demands much experience and patient observation. But to enable yourselves to recognise diseases of the crystalline lens and vitreous humor, requires comparatively little labor. Even by means of a piece of common looking glass, used as I have just described in the illustration of the darkened room, you can with a little practice soon learn to detect opacities of the vitreous humor and of incipient cataract.

The ophthalmoscope is principally used in examining diseased conditions of the lens, vitreous humor, retina and choroid. It is occasionally employed in detecting differences of convexity in the different chambers of the cornia, as I shall show you in considering the accommodation of the eyes to different distances and its anomilies. It is well for you before attempting to use the ophthalmoscope to examine repeatedly by simple inspection many normal eyes of different individuals of different ages, in order to be accustomed to notice the condition of the cornea, its distance from the iris, the size and shape of the pupil, and the *color* of the lens, which last, you are aware, in advanced life is normally of a yellowish tint, not to be confounded with the discoloration of cataract. After being able to examine the eye well in this way, you should commence the examination with the ophthalmoscope of patients affected with complete amaurosis, in whom the transparent media are normal. In these cases, the patient will not become fatigued by long and repeated examinations. In this manner you will be able to recognize at a glance when the transparent portions of the eye are normal. The orange red disk which you will observe as you look through the pupil will serve as a guide in recognizing abnormal changes. For example, if you observe small dark spots in the disk situated in the plane of the pupil you may be certain they are situated on the anterior surface of the lens; if situated just back of the iris and near the circumference of the disk, especially if they radiate towards the centre, you may state confidently that

the patient is afflicted with incipient cataract. If, as the patient rotates the eye, you observe dark irregular bodies moving in different directions, especially upwards and downwards, you know that there are floating masses of pigment in the vitreous humor. Sometimes these collections of pigment do not change their relative position, but are fixed in the vitreous humor. Sometimes you are able to detect recent hœmorrhages from the choroid, retina, and other tissues ard foreign bodies in the vitreous humor.

I will here call your attention to another mode of examining the eye. If you stand facing your patient, placed in such a position, that the light from a window, or rather from a bright lamp, falling through a double convex lens of two and a half inch focus obliquely upon the eye, will become concentrated in the pupil, you will secure an excellent view of all that is situated in the pupil or just behind it. I advise you to become familiar with this mode of examining the eye, for it is very advantageous as at the same time simple. Thus far the examination of the eye with the ophthalmoscope through a dilated pupil is simple and requires comparatively little practice. The investigation of the abnormal conditions of the retina and choroid, however, is a much more difficult matter. The selection of the right lens and the adjustment of the ophthalmoscope at the suitable distance from the eye, to secure a distinct image, are points of difficulty not readily overcome by the beginner in the use of the instrument. As I have already stated, the most convenient cases for the beginner to examine, are those where there is complete amaurosis and dilatation of the pupil, since a strong light can be thrown into the eye for a long time without fatigue to the patient. The appearance of the retina as seen in the dissected eye has already been demonstrated to you. The fine vessels and the end of the optic nerve, where it enters the sclorotic, which is scarcely a half line in diameter, appear very much magnified through the ophthalmoscope. The former can be seen passing in nearly all directions, principally however, upwards and

downwards from the centre of the optic nerve, which appears as a large round well defined disk of a very pale orange color. Some of the most important pathological changes in the retina which can be observed by the ophthalmoscope, are deposits of pigment, exudations of lymph, under and in the retina, detachments of the retina from the choroid, and obliteration of the vessels. Changes in the appearance of the optic nerve also, as regards size, form, and color, may be readily seen. In the choroid, absorption and increased deposition of pigment, extravasation of blood, and some of the products of inflammation can be seen with the ophthalmoscope as plainly as corresponding changes in the iris can be recognized by the naked eye.

I might mention other abnormal conditions, but those to which I have already alluded are sufficient to demonstrate to you how indispensable the ophthalmoscope is in forming an accurate diagnosis in diseases of the interior structures of the eye.

I should not omit to urge upon you care in the use of this instrument where there is photophobia or active inflammation of any of the tissues of the eye. When, however, the patient can bear to look directly at the light of an ordinary lamp held quite near the eye, there can be no danger in using the ophthalmoscope. As you gain experience in the use of the instrument, you will find not only that you can make an examination with greater rapidity, but also with a smaller amount of light. It is always your duty to inform patients that the dilatation of the pupil produced by Belladonna or Atropine, will cause for a few days an indistinctness of vision and a certain degree of photophobia, which may require a common shade over the eyes and perfect rest.

Nearly all the recent works upon diseases of the eye contain more or less upon Ophthalmoscopy. If you wish to comprehend the whole subject you must study the theory and use of the instrument, and also the pathology of the retina and choroid, as given in the Archive for Ophthalmology, in the

works of Arlt, Stellwag, E. Jaeger, and Hogg. The beautiful colored plates of Jaeger and of Liebreich, which I show you here to-day, will give you an excellent idea of abnormal conditions as revealed by the Ophthalmoscope.

INVERSION OF THE UTERUS.

By MORTON M. EATON, M. D., of Peoria, Ill.

Having never had in my own practice but two cases of perfect inversion of the womb, I would not make any remarks on the subject, had I not been invited so to do. One case I successfully treated about six months since, the other has but recently come under my notice, and I have as yet made no effort to effect its reduction. I believe this accident to be of unfrequent occurrence. I recollect some four years and a half since, being called to a lady hastily; the messenger stating that the womb had come down between her legs, when, on examination, I found it to be a case of miscarriage, with a breech presentation.

And statements of the common people asserting that Mrs. So and So's womb came out of her body turned inside out, and went back itself, etc., are to be credited about as much as when they tell of having their eyes "taken out, scraped and replaced by some noted oculist, with great benefit to the sight."

Most physicians are too timid in attempting to act when unlooked for emergencies arise, and are slow to undertake a case of unusual occurrence.

For *this* reason, patients often loose their lives, and VERY FREQUENTLY put themselves to great expense and trouble to be treated by some physician in a distant city, when in very many cases, if the family physician had possessed a little more energy and enterprise, his patient would have recovered as well and saved considerable money and time, and the physician

gained some reputation and experience, and thereby been encouraged to renewed application in the duties of his profession.

Hence I report this case, not to attempt to disprove that it is usually difficult to treat inversion of the uterus successfully, but to encourage the timid, that if they use a little energy, many times their success will far exceed their expectations, and what they had thought difficult would be easily accomplished.

Mrs. S., of W—— st., in this city, called on me at my office, about six months since, stating that she was the mother of three children, the youngest about two months of age; that her confinement had been easy and natural. She was attended by her family physician; nothing unusual occurred; that about a week afterward, she walked about the room, and while doing so a tumor came down between the thighs; that she had tried to press it back, but could not, and she had called to enquire if it should be removed. She could hardly walk from the inconvenience the tumor gave. I examined the tumor and found it to be an inverted uterus, hanging 3½ inches external to the external genitalia, and of the size of my two fists. I informed her of its nature, and proceeded at once to reduce it. I oiled the organ with some Ol. Ricini and my hand as well, and indented the most depending portion with my two front fingers, and finding that I could partially reinvert the womb, I formed my fingers into the form of a cone and making continuous and gentle pressure for several minutes I found I was slowly, but surely reducing the inverted organ, and in about ten minutes had the satisfaction of feeling the fundus of the womb spring from before my fingers with a jerk and of feeling the Os Uteri in situ.

I filled the vagina with sheet cotton and sponge, and applied a perineal bandage, directing her to retain it there till the next day, then to remove it and wash out the vagina with a weak astringent lotion, and re-apply some cotton and the bandage, and repeat this each day. She did so and has had no trouble since. The wash was used about two weeks.

[The following correspondence explains itself.—Ed. Jour.]

Byfurorspeculoproulceroutericumargentenitrate, &c., is the title of an essay which will teach young physicians how to make twelve thousand dollars per year. Mr. Editor, would you publish the same? If so, address

Dr. Cicatrix, P. O., Chicago.

Dear Dr. Cicatrix:

Yours of the —— *ult.* was duly received, but meanwhile—*Tempora mutantur et nos mutamur cum illis*—the Journal has passed into other hands. They permit, however, to reply to yours briefly. The publication of the essay is objected to:

1st. Because in these days of "shoddy" wealth is becoming a vulgárity, and its accumulation by a physician tends to impair the "dignity of the profession."

2nd. Because housebreaking, highway robbery and picking pockets, when successfully practiced, may yield the operator more than $12,000 a year, and hence the womb-burning practice would suffer by contrast.

3rd. Because it is not professional to show how "by indignities men come to dignities."

4th. Because there is danger of personalities, and the *impersonal* editorial "we" which "we" have just sloughed off, cannot abide the *personal;*—Speculo *ad alteram.*

5th. Because the ladder which takes one man to wealth and honor, oftentimes takes another to the pillory of popular contempt, or the richly merited hangman's noose.

6th. Because disclosures of unripe plans, or plans so ripe that they verge upon rottenness, of necessity, spoil the whole play, as the squeaking voice of "Bottom, the Weaver," dissipated the alarm of the audience when the leonine illusion waddled down to the footlights.

7th. Because carrying sandal-wood to the Chinese, now that everybody has learned the trick of it, is much like carrying coals to Newcastle.

8th. Because the imposture is fast unmasking itself.

9th. Because "we" have fifty other reasons, obvious to the cleanly mind, for not meddling with an emphatically "*dirty*" business, even though netting $12,000 a year. Ex-Ed.

FOREIGN INTELLIGENCE.

TREATMENT OF DROWNING.—The following rules have been just issued by the Royal Humane Society. They are stated to be "the results of the labors of the committee of the Royal Medical and Chirurgical Society of London."

DIRECTIONS FOR RESTORING THE APPARENTLY DEAD.—I. *If from Drowning or other Suffocation or Narcotic Poisoning.*—Send immediately for medical assistance, blankets, and dry clothing; but proceed to treat the patient *instantly*, securing as much fresh air as possible.

The points to be aimed at are: first, and immediately, the restoration of breathing; and, secondly, after breathing is restored, the promotion of warmth and circulation.

The efforts to restore life must be persevered in until the arrival of medical assistance, or until the pulse and breathing have ceased for at least an hour.

TREATMENT TO RESTORE NATURAL BREATHING.—*Rule* 1. *To Maintain a Free Entrance of Air into the Windpipe.*—Cleanse the mouth and nostrils; open the mouth; draw forward the patient's tongue, and keep it forward; an elastic band over the tongue and under the chin will answer this purpose. Remove all tight clothing from about the neck and chest.

Rule 2. *To Adjust the Patient's Position.*—Place the patient on his back on a flat surface, inclined a little from the feet upwards; raise and support the head and shoulders on a small firm cushion or folded article of dress placed under the shoulder-blade.

Rule 3. *To Imitate the Movements of Breathing.*—Grasp the patient's arms just above the elbows, and draw the arms gently and steadily upwards, until they meet above the head (this is for the purpose of drawing air into the lungs); and keep the arms in that position for two seconds. Then turn down the patient's arms, and press them gently and firmly for two seconds against the sides of the chest (this is with the object of pressing air out of the lungs. Pressure on the breast bone will aid this.)

Repeat these measures alternately, deliberately, and perseveringly, fifteen times in a minute, until a spontaneous effort to respire is perceived, immediately upon which cease to imitate the movements of breathing, and proceed to induce circulation and warmth (as below).

Should a warm bath be procurable, the body may be placed in it up to the neck, continuing to imitate the movements of breathing. Raise the body in twenty seconds in a sitting position, and dash cold water against the chest and face, and pass ammonia under the nose. The patient should not be kept in the warm bath longer than five or six minutes.

Rule 4. *To Excite Inspiration.*—During the employment of the above method, excite the nostrils with snuff or smelling salts, or tickle the throat with a feather. Rub the chest and face briskly, and dash cold and hot water alternately on them.

The above directions are chiefly Dr. H. R. Silvester's method of restoring the apparently dead or drowned, and have been approved by the Royal Medical and Chirurgical Society.

Treatment after Natural Breathing has been Restored. —*Rule* 5. *To Induce Circulation and Warmth.*—Wrap the patient in dry blankets, and commence rubbing the limbs upwards, firmly and energetically. The friction must be continued under the blankets or over the dry clothing.

Promote the warmth of the body by the application of hot flannels, bottles or bladders of hot water, heated bricks, etc., to the pit of the stomach, the arm-pits, between the thighs, and to the soles of the feet. Warm clothing may generally be obtained from bystanders.

On the restoration of life, when the power of swallowing has returned, a teaspoonful of warm water, small quantities of wine, warm brandy and water, or coffee, should be given. The patient should be kept in bed, and a disposition to sleep encouraged. During reaction large mustard plasters to the chest and below the shoulders will greatly relieve the distressed breathing.

II. *If from Intense Cold.*—Rub the body with snow, ice, or cold water. Restore warmth by slow degrees. In these accidents it is highly dangerous to apply heat too early.

III. *If from Intoxication.*—Lay the individual on a bed with his head raised. The patient should be induced to vomit. Stimulants should be avoided.

III. *If from Apoplexy or Sunstroke.*—Cold should be applied to the head, which should be kept well raised. Tight clothing should be removed from the neck and chest. Stimulants should be avoided.

Appearances which Generally Indicate Death.—There is no breathing or heart's action; the eyelids are generally half closed; the pupils dilated; the jaws clenched; the fingers semi-contracted; the tongue appearing between the teeth, and the mouth and nostrils are covered with a frothy mucus. Coldness and pallor of surface increases.—*Brit. Med. Journ.*, Sept. 12, 1863.—*Medical News.*

SELECTED.

ON THE PRESENCE OF AIR IN THE VEINS AS A CAUSE OF DEATH.

By JAS. SUMNER GREENE, M. D.,
Of Dorchester, Mass.

Our attention was recently called to this subject under circumstances which led us to consult authorities for the purpose of ascertaining the supposed frequency of the accident, the conditions under which it may occur, the signs and symptoms attending it, and the nature and amount of evidence required in a given case of death to prove that it resulted from this cause.

These inquiries satisfied us: 1st, That medical gentlemen generally entertain but vague ideas on the subject; 2d, That there is plenty of evidence on record of the occurrence of the accident often enough, under various circumstances, to make it requisite that every practitioner of medicine and surgery should be sufficiently aware of the character of the danger to be able to take ordinary precautions for its prevention, to recognize it when it occurs, and to act promptly and understandingly for its relief; and, 3d, That the investigations heretofore made, while they throw much light on the subject, are far from being complete and satisfactory; that the occurrence of the accident is at least possible under circumstances which have never yet been discussed in this light; and that the interests of science and humanity require, further, more careful and systematic experiments and observation to settle the questions in dispute and clear up the points of obscurity.

Convinced of these things, our object in this paper will be, after some observations illustrative of the first mentioned point, to present as concise a view as possible of all the facts which we have obtained, indicating their chief sources. But while showing what is known, we hope at the same time to throw some new light on the subject, and to indicate what ought to be further elucidated; thus furnishing an index for future reference, and a starting point for new investigations.

There are several reasons why the subject is not better understood among us. In the first place, in its practical bearings,

it is a comparatively recent one. Sufficient care has not always been taken, in making experiments, to guard against sources of fallacy, and opposite and contradictory theories have been proposed to account for the phenomena noticed. Moreover, many of the reports of accidental death referred to this cause have been meagre and unsatisfactory; while from the nature of the symptoms—they being such as may occur under similar circumstances, but from other causes than the one in question—there is room for doubt as to the agency; and against a majority of the cases on record, objections on one or the other of these grounds might be raised with considerable plausibility. For these reasons the subject has not yet fairly taken rank among the unquestioned facts of medical science, and is very unsatisfactorily treated by our latest standard authorities on surgery, obstetrics, pathology, and medical jurisprudence.

For example, none of the works on morbid anatomy which we have consulted make any allusion to the subject, except that of Jones and Sieveking (p. 364,) and their remarks are comprised in a single paragraph. Of the works on medical jurisprudence in common use, only that of Taylor (p. 271) mentions the subject; while he refers to the accident only as connected with wounds about the neck, and makes statements as to its nature and causes which reveal very imperfect knowledge of the matter. Its surgical aspect is that best understood, yet Druitt dismisses it in twelve lines (p. 584); while Erichsen, who alone gives it due prominence, treats it as he has elsewhere, ably but somewhat controversially (p. 140), as do many of the French surgical authorities. Finally, Churchill's is the only system of obstetrics which makes any allusion to it whatever (p. 428). His remarks are just and valuable, but refer only to the occurrence of the accident after delivery, leaving other circumstances of not less importance unremarked. And yet, as will appear hereafter, the subject has important practical bearings upon each of these branches.

We will first consider the accident as it occurs during surgical operations, to which class a majority of the cases now known belong, and for convenience we shall include certain suicidal cases in the same category.

The first well authenticated instance occurred in the year 1818, in the hands of M. Beauchêne, at the Hôpital St. Antoine (Ollivier, *Dict. de Méd.*, art. "Air"). Within a few years thereafter similar cases were reported by MM. Dupuytren, Castara, Delpech, Roux, and Ulrich (Velpeau, *Leçons Clinicales*, vol. i. p. 451, et seq., Amussat, *Recherches sur*

l'introduction accidentelle de l'air dans les veines, and Ollivier, *loc. cit.*,) all ending fatally, and verified by post-mortem examination. Numerous other cases were made known, in which the symptoms bore close analogy to those before named, but which ended in recovery. Prominent among these are cases by MM. Roux, Clémot, Goulard, Mirault, Rigaud, Delaporte, Malgaigne, and Amussat (*Id.*). In this country a case was reported by Dr. Valentine Mott (*Am. Journ. Med. Sci.*, Nov. 1828, p. 107), one by Dr. Mussey (*Id.*, Feb., 1838, p. 391), and three by Dr. John C. Warren ("On Tumours," 1839, and *American Cyclopædia of Pract. Med. and Surg.*, vol. i. p. 263). Two of Dr. Warren's cases were well marked, and though recovery followed in one of them, and in the other no autopsy was obtained, yet no doubt as to their nature existed in the minds of the surgeons who witnessed them. In 1838, M. Velpeau took up the subject in his *Cliniques* (*op. cit.*,) giving a synopsis and brief analysis of 31 cases, including those of Drs. Warren and Mott, and one by himself. The following year M. Amussat's work appeared (*op. cit.*,) in which the details of thirty-six cases occurring in human beings were given. In 1843, Professor Wattman, of Vienna, published a monograph on the subject, in which he reported four cases witnessed by himself. Not having seen his paper, we derive our knowledge of it from able reviews by Dr. John Reid (*Physiological Researches*, p. 539), by a writer in the *Am. Journ. Med. Sci.*, vol. ix. p. 170, and by one in the *Br. and For. Med. Rev.*, vol. xxiii. p. 443. The last named writer collected and arranged in a tabular form 54 cases, more or less authentic and complete in detail, including all those of MM. Velpeau and Amussat, except four very doubtful ones of the latter, which occurred before the possibility of the spontaneous entrance of air into the veins was recognized. Besides these we find cases reported by Dr. March, of Albany, (Cooper's *Surg. Dict.*, 1838), by Dr. Marcacci (*Revue Médicale*, 1847, p. 599), by Prof. Portal, of Palermo (*Id.*, 1839, p. 98), by M. Riberi, of Turin (*Gazette Medicale*, 1843, p. 204), by M. Schmid (*Id.*, 1851, p. 561), by M. Girbal (*Id.*, 1853, p. 46), by Dr. R. H. Coolidge, U. S. A. (*Philadelphia Medical Examiner*, 1849), by Dr. Willis, of Barnes, England (*London Med. Gaz.*, xli. p. 608), by Mr. G. F. Lane (*Id.*, xlv. p. 926), and by Mr. Ward and Mr. Hutchinson, each a case (*Medical Times and Gazette*, Feb. 1856). That reported by Dr. Coolidge was a case of suicide. Finally, and while this paper is undergoing revision for the printer, we are apprised of ano-

ther accident of a similar nature occuring under the hands of Dr. Henry G. Clark, of Boston, Surgeon at the Mass. General Hospital.* It is very possible that other cases have been reported, but these are all that have met our observation.† Of these 67 cases, much the larger portion occurred during the removal of tumors of the neck, breast, and axilla; two, those of B. Cooper and Delpech, were in amputations at the shoulder-joint; one, that of Mussey, was during amputation of the scapula and clavicle; two, those of Rigaud and Clémot, were while tying the subclavian artery; three were during venesection at the external jugular; three during venesection at the median vein; and one, that of Willis, was during the insertion of a seton needle in the neck. Among the veins wounded were the external jugular in 13 cases, including the three above named; the internal jugular in 10 cases, the subclavian in the case of Mussey and the axillary in that of Goulard. One, attributed to Dupuytren, is referred to the internal saphena vein; but this, as well as those referred to the median vein, is not entitled to much confidence. In the others the vessel was either not known, or was ascertained to be a branch of one of the above named veins, cut either about the neck, shoulder, axilla, or breast.

What are the characteristic symptoms? During the progress of an operation, when all seems going on well, a peculiar sound is heard at the bottom of the wound, oftenest described as gurgling, hissing, or bubbling. There is frequently a slight issue of venous blood, indicating that a vein is wounded, and often bubbles of air are noticed at the point from whence the sound proceeds, as in the cases of Drs. Warren Mussey, Clark, and others. The patient suddenly turns pale,

* The patient in Dr. Clark's case was undergoing an operation for the removal of a very large glandular tumor, occupying the whole side of the neck, and during the latter part of it, and when traction was made upon the tumor, a sucking sound was heard, and bubbles were distinctly seen to enter the jugular vein near the clavicle. The vein had been tied above the wound when the operation was begun, and therefore there was no bleeding to obstruct the view of the orifice. Pressure was instantly applied, and the sound ceased. The vein was then tied below the wound, and the operation was completed without any apparent ill effects. These facts were kindly furnished us by Dr. Clark, who will publish a detailed account of the case in the *Transactions of the Boston Society for Medical Improvement.*

† Mr. Taylor refers to a case published in the *Association Journal* (1853, p. 9), but we have not the particulars. Prof. Valentine Mott writes to M. Amussat (see Amussat, *op. cit.*, p. 157) that he has witnessed three fatal cases in this country; but the details he gives do not enable us to decide whether they are identical with any of those included in the above category or not.

utters a cry, such as "I am faint," "I am dying," and becomes insensible; or there may be observed anxiety of countenance, labored respiration, lividity of the lips, dilated pupils, and convulsions. These symptoms may gradually give way and the patient recover, or they may result in death. The state of the pulse is very apt to be overlooked in the confusion incident to such dangerous and unlooked for symptoms; when sought, it is usually feeble and often imperceptible. Sometimes, however, as in the case of Dr. Mott, violent and irregular action of the heart is observed. Again, lividity of the face and stertorous breathing may be prominent symptoms, as in the cases of Dr. Warren. In the cases of Drs. Beauchêne, Mussey, Portal, and Girbal, a cold sweat was seen to break out upon the face. In Dr. Warren's fatal case a vermillion flush was seen upon the previously livid cheeks during the progress of the efforts at restoration, but soon vanished. In the case of Marcacci a violent cough, lasting twenty minutes, was a noticeable symptom. In Bransby Cooper's case there was involuntary ejection of urine and feces. Syncope is often the predominant feature, and the patient may die with scarcely a struggle. A dull, rustling sound was heard in the thorax in one of Wattman's cases, distinct from the hissing noise at the wound; and the same sound is said to have been heard in Beauchêne's case, but we do not find it mentioned in any of the accounts of it which we have consulted.* In the later case, by M. Girbal, auscultation of the heart was practised, and revealed a *bruit de gargouillement*, completely masking the tic-tac. These, however, are the exceptional signs and symptoms; usually their course is much as at first described. A few of the more prominent ones require further notice.

The warning sound at the wound is almost invariable. Thus it was distinctly noticed and described in 48 instances, including one of suicide, and comprising almost all the cases of which we have any details. It has been described as a peculiar sound (*un bruit particulier*) exactly like that which air produces in penetrating by a small opening into the chest of a living animal, a prolonged hissing (*un sifflement prolongé*) analogous to that produced by the return of air into an exhausted receiver (*par la rentrée de l'air dans un recipient où l'on a fait le vide*), a very noisy snuffling (*reniflement très bruyant*), &c., &c., (Ollivier, *op. cit.*). It is sometimes re-

* See Ollivier, Velpeau, and Amussat, *op. cit.*

peated more than once, as in the cases of Castara, Rigaud, and Clémot. It always ceases upon placing the finger upon the spot whence it issues, and is likely to be renewed if the pressure is removed, as occurred in the cases of Beauchêne and Clémot, and in one of Wattman's.

Directly upon this sound usually follow syncope or convulsions, or both. In 25 cases, only the symptoms of syncope were remarked; in 6, convulsions without syncope; while in 7, syncope was succeeded by convulsive spasms. In the remaining cases, either no general symptoms occurred or death was described as immediate, and no particulars given. Tetanic spasm was noticed in the case of Mirault; opisthotonos, in that of Asmus; and distortion of the face, followed by temporary hemiplegia, in that of Mott. In 13 cases, the respiration was noticed to be embarrassed, hurried, or irregular.

A sudden cry or exclamation was heard in 17 cases. "My blood is falling into my heart; I am a dead man," were the words uttered by Beauchêne's patient. In the case described by Mr. Lane, a small opening was made in a tributary of the axillary vein, a noise like the sucking of water and air into a syringe was heard, and the patient exhibited symptoms of syncope, which were followed by convulsions. She recovered, and in describing her sensations afterwards, said that "she felt something bubble under her arm and shoot quite cold across her breast, and just as she went off she got quite cold all over." This symptom is of course wanting when the patient is fully etherized, as in Dr. Clark's case. In M. Girbal's, the patient had inhaled chloroform, but was becoming conscious at the time of the accident, and uttered a "slight, plaintive cry." Nine cases in which the sound was heard were followed by no bad consequences whatever, and 24 recovered after symptoms of more or less severity. Of the fatal cases, 24 died immediately, or within a few minutes after the conclusion of the operation. The patient of Willis lived 7 hours; that of Mirault, 3 hours; that of Clémot, some hours; that of Girbal, 13 hours; one of Roux, 7 days; and one of Wattman's, 28 days. Of the remaining 4 cases, we have no particulars. The patient of Wattman died finally of pneumonia; that of Girbal, with symptoms of asphyxia; but no autopsy was made in either case.

Of the fatal cases, 18 were examined after death. In that of Graafe it was merely reported that no important organ was wounded, and that the heart and great vessels were natural.

It was mere conjecture that placed it in the present catalogue; all that was stated of the circumstances being that syncope and death occurred during the removal of a gland in the axilla. In the case of M. Beauchêne neither air nor blood was found in any of the cavities of the heart; but there were numerous bubbles of air in all the vessels of the brain, in the inferior vena cava, iliac veins, aorta, and crural arteries. Dissection in this case was made eighteen hours after death. In the case of M. Roux, where death was delayed until the seventh day, the cavities of the heart were also found empty, and no air was discovered in the veins, while the aorta and iliac arteries contained air mixed with blood. It is noticeable also that the lungs were œdematous, and the bronchia contained frothy mucus. In the remaining 15 cases air was found in the right cavities of the heart. In 4 cases, besides the two above named, air was found in the arterial system: those, viz., of Dupuytren and Gorré, and the suicidal cases of Pellis and Handyside. In 6 cases the air in the heart is stated to have been mixed with blood; in 2 it is stated that it was not so mixed; while in the remainder the condition in which it existed was not remarked. In 8 cases air was noticed in the venous system; in only 2, those of Willis and Coolidge, was it particularly noticed in the pulmonary artery. In both cases of M. Roux it was stated that no air was found in the vessels of the brain; while in M. Dupuytren's case it was found there. The length of time elapsing before the autopsy, is stated in but six of the cases: in these it was from 18 to 26 hours, with the exception of one, in which it was 52 hours. In the case of Roux a rough analysis of the gas contained in the heart was made, and it was decided to be atmospheric air. In the case of Pellis an analysis was made by M. Bischoff with a similar result. M. Roux also measured such of the air contained in the right ventricle as he could collect, and found 11 centimetres cubes (about two-thirds of a cubic inch).

We have now seen that accidents, all dangerous, and many fatal, do occur under specified circumstances, ushered in by a sound indicating the entrance of air into a vessel, attended by a peculiar class of symptoms, and in which the autopsy, if one is made, uniformly discloses the presence of air in the circulatory system. Let us now see if anything is known corroborative or explanatory of these facts. Here, as in all physiological investigations, we resort to experiments upon animals. We find, however, that experiments bearing upon the subject were made long before the subject itself was known to have any practical importance.

Nearly two centuries ago it is stated that Wepfer killed an immense ox by blowing air into the jugular vein. Similar experiments were afterwards made upon dogs and sheep by Redi, Bohn, Heydius, R. J. Camerarius, Brunner, Harder, Sprœgel, and Valisneri (Morgagni, *De Sed. et Caus. Morb.*, Epis. v.). Dr. Langrish, an English physician of the last century, made similar experiments upon dogs; and Châbert, a French *veterinaire*, upon horses. The chief practical result seems to have been the adoption of this as a convenient mode of killing superannuated horses (Ollivier, *op. cit.*, p. 66). At the beginning of the present century interest was reawakened in the subject by Bichât, who made some new, but as it proved, erroneous statements relative to the amount of air necessary to produce death, believing that a single bubble alone was sufficient (*Récherches Physiol. sur la Vie et la Mort*, art. ii. part ii.). In 1809, Nysten published the results of numerous and careful experiments made by him upon animals with a view to determine the effects produced upon the animal economy, by the presence of atmospheric air and various gases in the circulatory system. At this time nothing was known of the possibility of the spontaneous entrance of air into an opened vein, except a case reported in 1806 by Verrier of its entrance into the jugular vein of a horse when opened in phlebotomy (Velpeau, *op. cit.*). It is true that Redi and Caldesi saw air circulating in the veins of tortoises, Lancisi in hedgehogs, and Morgagni in vipers, trout, and carp, after being wounded; but they inferred that it existed naturally in those animals. It is true also that Méry noticed the appearance of air in the lower vena cava of a dog, after puncturing the vein; but he thought it was developed in the smaller venous branches, and passed forward to fill the vacuum caused by the escape of blood (Morgagni, *op. cit.*, secs. 22–26). Haller, indeed, who witnessed the same phenomena, was convinced that they only appear after a considerable wound of some vessel, and that they are not seen when the veins have been well managed. Nysten himself had observed many times that the veins and right auricles of decapitated men were distended with air; but he made no attempt at its explanation (*Récherches de Physiol. et de Chimie Pathologique*, p. 5). After instances became known of death in the human species attributed to this cause, these experiments and observations became matters of more practical interest. Dr. Wing, of Boston, published the result of experiments made by him upon rabbits and sheep (*Boston Med. & Surg. Journ.*, May

14, 1834). Other experiments are recorded by Magendie (*Leçons sur les Phénomènes Physiques de la Vie*, 1836), and by Dr. John Rose Cormack (*Inaugural Dissertation*, 1837). In 1837 a warm discussion arose in the French Academy of Medicine, consequent upon the account given by M. Amussat of a case occurring under his hands, and where recovery was attributed to the means used by him (*Bulletin de l'Academie*, vol. i. pp. 895 and 905). On this occasion M. Gerdy and others denied the probability of the entrance of air causing death in human beings, chiefly on the ground that the symptoms reported differed from those noticed in animals when air was forcibly injected. The discussion resulted in the appointment of a commission, of which M. Bouillaud was reporter, before which M. Amussat exhibited a series of forty experiments on dogs, horses, and mules, to determine the effects of the spontaneous entrance of air, and the various circumstances which modify those effects (*Id.*, vol. ii. p. 182). Later experiments have also been recorded by Mr. Erichsen (*Edinburgh Med. and Surg. Journ.*, Jan., 1844,) by M. Bernard) *Des Substances Toxiques et Médicamenteuses*, pp. 161–163), and by Prof. Dalton (*Am. Med. Monthly*, June, 1860, p. 507).

Some of these results are in brief, as follows: It was found that the injection of air into the veins of a living animal, whether by means of a syringe, as in the experiments of Nysten, or by insufflation through a tube, as in those of Dr. Cormack, produced symptoms proportioned to the quanty used and the rapidity with which it was injected. When injected little by little, and repeatedly, the result was the expectoration of a transparent frothy liquid, mucus râles, and death sometimes as late as the third day. A still less quantity produced only momentary excitement of the heart's action, followed, after repeating the injection, by an enfeebling of the pulse. Sometimes complete recovery took place after quite violent symptoms. The phenomena produced in the fatal cases were as follows: A *bruit particulier* was heard, coming from the region of the heart, and synchronous with its systole. This was caused by the mixture of air and blood taking place in that organ, and sometimes lasted many minutes. It was compared to the sound produced by beating white of egg and water together (*en battant ensemble du blanc d'œuf et de l'eau.* Nysten, *op. cit.*, p. 16). The animal uttered some cries of suffering after the first injection, the pulse became more frequent, the respiration quickened and panting, the limbs stiffened and sometimes agitated by convulsive movements, the urine and

fecal matters were forcibly expelled, and in proportion as the experiment was prolonged the pulse grew feeble and ceased to be felt, the inspirations became rare and deep, and death soon followed. If a fatal quantity was introduced at a single injection the effects were sudden falling, cries, convulsions, and almost instant death. Dr. Wing noticed in some of his cases that the heart palpitated violently, and then suddenly ceased altogether. We have noticed the same thing in a cat subjected to a like experiment. The heart thumped violently against the walls of the chest several times, ceased suddenly, and again thumped as before. Its action ceased altogether in less than a minute after air entered, with the exception of the right auricle, which continued its contractions for several minutes.

The quantity of air necessary to produce death varied with the different species of animals, and among different individuals of the same species. Some of the earlier experimenters noticed that dogs succumbed sooner than sheep, and Morgagni concluded that it was because the latter were colder blooded animals (*op. cit.*, sec. 22). Nysten estimated that between 40 and 50 centimetres cubes (2.44 to 3.05 cubic inches) for a small dog, and from 100 to 120 centimetres cubes (6.10 to 7.32 cubic inches) for a large dog were required, and much larger quantities for larger animals. Dr. Wing found that a volume equal to f ℥ iij did not kill sheep; the symptoms subsided in about 20 minutes—f ℥ vj produced apparent death in a sheep, and f ʒ iij killed rabbits in a few seconds. According to Mr. Rey, Professor in the Veterinary School at Lyons, two full expirations are required to kill horses, and sometimes a much larger quantity fails to cause death (*Gaz. Hebdomadaire*, 1861, p. 437). He states that he has heard the *bruit de glouglou* in these animals for some hours after bleeding without any accompanying disturbance of the general functions.

The experiments of the French commission, and those of Erichsen, are the only ones recorded in which the air was spontaneously admitted; in these the circumstances were made to resemble, as closely as possible, those under which it accidentally enters the veins in man. The vein opened was the internal jugular in most of the cases; once the subclavian was selected, once the axillary, and once the brachial near the border of the axilla. It was found that air always entered these veins in those parts to which the venous pulse extended, and not beyond that limit unless the orifice was put upon the stretch, or a tube inserted to the part where the venous pulse

existed. The entrance of air was always announced by a lapping sound (*lappement*) in dogs, and a gurgling (*glouglou*) in horses. This was heard at the wound, and was generally synchronous with the inspiration, but sometimes with the diastole of the heart. Auscultation of the heart in dogs revealed a sound described as a mixture of blowing and gurgling (*un mélange de souffle et de glouglou*) as a churning sound, or as a *bruit de souffle* accompanied by a *bruit humide*. This sound is not mentioned as occuring in horses. During expiration frothy blood often made its escape from the wound. The symptoms were much as when air was injected, but death was more gradual. Anxiety and agitation, great debility, labored respiration, cries, and violent convulsions, with ejection of urine and feces, preceded the fatal termination. Death occurred in from 3 to 36 minutes in healthy dogs. It took place sooner in the vertical position than in the horizontal. The symptoms seemed to be aggravated in this position, probably in part because the escape of blood and froth at the orifice in the vein was prevented. It was found that death took place sooner if the animals were debilitated before the experiments. A few experiments were tried to ascertain the remedial effects of suction and of compression of the chest, but they gave no satisfactory results.

Examination after death constantly showed great distension of the heart with frothy blood, which was also found in the pulmonary artery, and in more or less of the larger veins. In horses, air was also found in the arterial system in all cases.

This was attributed by M. Bouillaud to the larger size of the pulmonary capillaries in those animals than in others, an explanation which may also help to account for the greater quantity of air required to produce fatal effects in them. In dogs, air was found in the arteries and left cavities of the heart only when death was delayed for some days after the experiment. This condition was found in three out of four cases, of the commission, thus delayed; in the fourth the heart and vessels were found collapsed and flabby, and containing no air, as was the case in all the similar experiments of Nysten. No distinction can be drawn between the post-mortem appearances in the cases where the admission of air was spontaneous and those where it was injected. Erichsen states that in many experiments by him the right cavities of the heart, though they contained bloody froth, were not distended by it (*op. cit.*, p. 8); and he draws an argument from this in favor of his theory, that distension of the heart has no

thing to do with the production of death. However true the theory may be, the fact is entirely at variance with those remarked by other experimenters, as well as with the condition of the organ noticed in man after death from the same cause.

The brief *résumé* which we have now given of the results of experiment upon animals, imperfect though the experiments were, sufficiently establishes, by comparison with the accidents in man which we have considered, that the two classes are of the same nature, and due to the same cause.

Let us now consider another class of conditions, less understood than the preceding, under which air may enter the circulation and produce its characteristic effects, viz., through the veins of the uterus.

A fact illustrative of this possibility was observed by Legallois (*Jour. Hebd. de Méd.*, 1829, vol. iii. p. 183.) A female rabbit had had two successive inversions of the uterus after parturition, and he had placed himself to watch her, when all at once she struggled (*se débattre*) convulsively and died in less than three minutes. The right auricle was full of bubbles of air; the pulmonary artery, and the two anterior venæ cavæ contained them only in the portions near the heart, while the posterior cava was filled with them as far as the place where it received the uterine veins, and no farther. These veins themselves were also filled with air. M. Legallois had seen the same thing in two other cases. His son, who relates this experience, asks if some of the cases of sudden death in women recently delivered, and where the autopsy has failed to disclose any adequate cause for the catastrophe, might not find explanation in this way; and M. Ollivier repeats the question, and pronounces it worthy of investigation (*op. cit.*). Some years later M. Nélaton observed that the liquid injected into the uterus of a woman who had died of erysipelas of the face, passed into and distended one of the veins of the large ligaments, driving before it bubbles of air (*Gazette Médicale*, 1840, p. 568).

In 1844, Prof. Simpson furnished Dr. John Reid with the following details, which first gave him the idea that death might occur from the introduction of air into the uterine veins. The patient had been delivered of twins; post-partum hemorrhage, with alternate contractions and relaxations of the uterus supervened, and she seemed to rally very imperfectly from the effects of the flooding. "I saw her," he says, "an hour or two afterwards. She had then a very weak and rapid, almost imperceptible pulse, an extremely anxious countenance,

and here and there was an evanescent scarlatinoid rash over the surface of the body." After death the uterine and hypogastric veins, and lower vena cava, as well as the larger veins of the extremities, were found full of frothy blood. He had since seen two other cases in which the same symptoms were present, but no autopsy was made.

Dr. John Rose Cormack read an essay on this branch of the subject before the Western Med. Society in 1850, but we have not access to his paper. It contained reports of seven cases, viz: that of Professor Simpson given above, one related by M. Besseme, particulars of which we shall give hereafter from the original source; and the five following, the few details of which we derive from the paper of Mr. May.

1st. A case by M. Lionet, of Corbeil: A lady, aged 27 years, had a natural labor with no hemorrhage. She soon became faint, breathed with difficulty, and expired five hours after delivery. Air was found in the heart and cerebral vessels. 2d. A case by Dr. Wintrich: Convulsive movements and suffocation followed expulsion of infant and partial separation of placenta. Air was found in the venous system. The other three cases were observed by Dr. Lever, of Guy's Hospital. In all of them there was hemorrhage after delivery, and death in a few hours. Air was found in the uterine and other veins. The following are the important features of a case reported by Mr. Berry (*L. and E. Monthly Jour. of Med. Sci.*, 1851, p. 189, from *Prov. Med. & Surg. Jour.*). A lady, aged 22 years, was safely delivered of her first child about 7 o'clock P. M. The labor was natural, and there was no hemorrhage. She expressed herself as feeling comfortable up to 11 o'clock. At 1 o'clock her husband became alarmed by her difficult breathing and sent for the physician, but before he arrived, at 2 o'clock, she had expired. A post-mortem examination was made on the morning of the second day. The uterus was midway between the pelvis and umbilicus. The peritoneum covering it was healthy, but pale. The vessels where the placenta had been attached were patulous. The vagina contained, at its superior part, a moderately sized clot of blood. The heart was the size of a male heart, and apparently distended. Upon making an incision into it a gush of air escaped and the organ became flaccid. No blood was found in any of its cavities. The kidneys presented a granular appearance, and the lungs contained scattered tubercles in their upper lobes. The other organs were healthy, and there were no signs of decomposition.

The three following cases were reported by Mr. May in the *Br. Med. Journ.* (*Am. Journ. Med. Sci.*, Oct. 1857.) The first occurred to Mr. Taylor, of Wargrave. Labor was proceeding naturally when, as no urine had passed, he attempted to introduce a catheter. At this moment a severe pain occurred, accompanied by the escape of about ¾ pt. of liquor amnii. The patient exclaimed, "Oh! how faint I feel!" was convulsed a moment and expired. Autopsy 48 hours after death. Uterus above umbilicus. Placenta upon anterior surface, not separated. Scarcely any blood in uterus, lower vena cava, or heart. Right auricle thin and distended with air.

The second case was furnished by Mr. Smith, of White Church. The patient was naturally delivered, and comfortable. Severe after-pain occurred, and soon great oppression was felt about the chest, with sinking, exhaustion, and restlessness, speedily followed by death. Autopsy the same evening. Body not yet cold. The uterus was large, and contained a piece of the placenta adhering; it contained a coagulum, but not large enough to have produced death. The right side of the heart was distended. On opening it a puff of air escaped and the organ collapsed. The valves were healthy. A small clot was contained in the left ventricle.

The third case was seen by Mr. May himself. The labor had been natural and the patient had resumed her duties, when, on the eighth day after delivery, she was taken suddenly ill and expired. Autopsy the following day. No evidence of decomposition. Frothy blood was seen on slicing the liver. Air in inferior cava and venæ portæ. The right heart was distended with frothy blood. Uterus the size usual on the eighth day.

Professor Oppolzer relates a case of uterine carcinoma (*Br. and For. Med.-Chirurg. Rev.*, vol. xxx., 1862), in the course of which air entered the circulation. The attack began with acute pains in the hypogastrium, extending over right thorax. In about 24 hours the skin of the whole right side was intensely red, and covered with vesicles filled with reddish serum. The redness proved to be due to hemorrhage. A subcutaneous emphysema was observed in the epigastric region. Collapse set in, and death took place in a few hours. The details of the autopsy, which was made 33 hours after death, was very minute. The integments, as well as the spleen, crepitated on pressure. The viscera were pale and flaccid. Air or frothy blood was found in the right cavities of the heart, beneath the visceral layer of the pericardium, in the vessels of the

liver and kidneys, the internal spermatic vein, and vena cava. The latter gave a tympanitic resonance on percussion. The disease proved to be villous cancer.

These eleven cases are all that we have been able to collect in which death was attributed to the spontaneous entrance of air through the uterine veins. Some of these are too meagre in detail to admit of an opinion being formed upon them; while in one or two it seems possible that the gas found in the vessels was developed there by morbid changes, but in other cases the evidence is strong in favor of the cause assigned, and when taken as a whole we think very little doubt can be entertained as to the nature of the accident. The chief obstacle to full belief, in many cases, is the failure of the observers to state the precise condition of the body, as to post-mortem changes, and what precautions, if any, were taken to prevent the admission of air during the autopsy. But when we remember that the gentlemen who reported them were generally men of experience and eminent in the profession, and that the presence of air was suspected beforehand, we cannot doubt that, at least, ordinary precautions were taken against fallacy. It will be asked whether air may not be oftener present in the heart after death than is generally supposed, but only noticed when specially sought for. To this it may be answered that Dr. Cless, of Stuttguard, examined 1200 bodies after death from various diseases, with especial reference to this possibility, and only found air in fourteen cases, and those where the previous symptoms had led to the suspicion that air was present. (*Trans. of Path. Soc of London*, vol. ix. p. 154.)

We now come to another class of cases, where the addition of another link in the chain of evidence renders it nearly or quite conclusive as to the cause of death. Among these we place the case of M. Bessems. It was one of adherent placenta in a hospital patient. Uterine injections of chlorinated water were being used, and previous to each injection small portions of the placenta had been torn away; the patient was weakened by loss of blood. It is stated that special care was taken to exclude bubbles of air from the syringe. On injecting the fluid for the third time, the woman immediately sprang up in bed (*se projette sur son séant*) and stretched out her arms, crying that she was suffocating. The head then fell backwards, the face grew pale, the eyes rolled upwards spasmodically (*se convulsent en haut*), and the look became fixed. It was thought to be an hysterical fit, but the respiration became less and less, the pulse was no longer perceptible, and,

in spite of all the ordinary stimuli, death took place within three minutes after the injection. Autopsy twenty-four hours after death. No trace of putrefaction; the uterus somewhat larger than the fist; no sign of inflammation in its walls; its cavity still contained a portion of placenta of the size of a small hen's egg; the inferior cava was distended, and contained many large bubbles of gas distinctly visible through its walls; the right cavities of the heart were distended and elastic. After tying the vessels, the organ was opened under water, and a large quantity of gas mingled with blood escaped. The left cavities also contained some bubbles. In this case we cannot doubt that the gas found in the heart and vessels made its entrance at the time of the injection, and produced the fatal result. Whether the gas was the result of decomposition of the placenta, or was atmospheric air admitted from without, the effects would be the same, as proved by the experience of Nysten (*op. cit.*); but if it had been the former, fewer traces of it would probably have been discovered after death, on account of the great solubility of those gases in the blood.

Prof. Simpson relates an instance stated to him by an Irish practitioner. This gentleman was blowing common air into the os uteri for the purpose of procuring uterine contractions, when his patient suddenly fell back and expired, no bad symptoms having been previously observed. There was only very slight hemorrhage. We give this on the authority of Dr. A. D. Sinclair, of Boston.

Prof. Dalton relates another case (*Am. Med. Monthly*, June, 1860, p. 519), first reported by Dr. John Swinburne, of Albany. A female abortionist attempted to procure delivery at the fifth month by rupturing the membranes with a gutta-percha catheter, and the patient fell back, as the woman supposed, in a fainting fit; a physician was called, but before he arrived the patient was dead. Autopsy, in the month of March, fourteen hours after death. Air was found in the sinuses of the uterus, the jugular veins, and even in the superficial veins of the body. The right cavities of the heart were distended with a spumous mixture of blood and air. The uterus contained a healthy fœtus; the membranes were unbroken, but were separated from the uterine walls on the right side, together with a portion of the placenta, and there was a perforation at this spot leading directly in the uterine sinuses. Prof. Dalton coincides with Dr. S. in the opinion that air was forcibly blown in, through the catheter, with the intention of

producing separation of the membranes. If this was the case, the way in which it entered the veins is sufficiently obvious.

The last case we have to record is the one which led us to examine the subject. It occurred under the observation of Dr. Homer O. Hitchcock, of Kalamazoo, Mich., and though not yet published, we are permitted by him to make use of the facts. An abortionist attempted to procure delivery of a woman four or five months pregnant, by perforating the membranes. He used a tube fourteen or fifteen inches long and about one-quarter inch diameter. Presently the husband, in the next room, heard his wife "screech," and a moment after the "doctor" opened the door and called for water, saying that the woman had fainted. The husband found her purple in the face, with the muscles of the chest and arms in contraction. Restoratives were tried to no purpose; she was dead in less than ten minutes. The man told the husband that the instrument did not hurt her until just as he was about to draw it out, when he blew in it, and she instantly struck at him with her hands, screamed out, and became blue in the face.

Viewed in connection with the facts and cases already considered, it would seem as if there could be no possible doubt as to the nature of the accident, even without the corroborative proof of a post-mortem examination; yet the physicians who conducted the autopsy had no suspicion of the presence of air in the vessels, and only examined the abdominal cavity and the uterus; while, if we mistake not, eminent surgical and pathological authority in this vicinity, on hearing the facts stated, expressed skepticism as to the agency of air in producing the result. Yet no less authority than Prof. Syme testified at the inquest in Dr. Willis's case, where death followed the puncture of a seton-needle, that an autopsy was not necessary to render certain the manner in which death was produced, and that it was only demanded by the interests of science. These gentlemen could not have been acquainted with the literature of the subject when expressing such an opinion. It only serves to illustrate the singular obscurity which veils the subject in this country, and the need there is that attention should be called towards it.

(Concluded in next number.)

EDITORIAL AND MISCELLANEOUS.

The Sanitary Commission.—There is nothing more honorable to the age and the country in which we live than the voluntary associations for the relief of our soldiers in the field. The deaths from disease in the best provided armies in war have been to those from wounds as 9 to 1. (MacLeod's Surgical Notes of the Crimean War). If much of this mortality is caused by unavoidable evils, much is also due to unwholesome food, insufficient housing and clothing, discouragement and intemperance. In a mere pecuniary sense, it would be better for any government to take good care of its soldiers. "To preserve the soldiers," says Baudins, a most eminent military surgeon, "is the first interest of a nation which carries on a distant war, it is also the best security for final success."

This necessity our own government was, like others, incapable of providing for at the beginning of the war, but it was felt instinctively by the people whose charity found action through the various "Sanitary Commissions," and according to official statements, supplies to the value of about ten millions of dollars have passed through their hands. As this was in addition to all the government could do, it stands forth as a charity unrivalled in any age or nation. The British people made the same efforts for their soldiers in the Crimea to the extent of perhaps one-tenth the above amount, efforts which says a French surgeon, "show the real greatness of the nation.

It is impossible to estimate the benefits conferred in preserving life, soothing suffering, administering consolation to the sick and wounded, in correcting abuses in the hospitals and making medical officers more vigilant and attentive; in restoring our armies to the state of comparative health and

vigor and efficiency which they now enjoy. It was charity following in the footsteps of relief to bind up his wounds.

Recently, when the enthusiasm seemed diminished and supplies were needed, it was proposed to hold a Fair of the Northwest at Chicago. Many thought it would be a failure, but the results far exceeded what could have been obtained at any former time. The Fair is thus described by the *Sanitary Commission Bulletin:*

The contributions to the Fair, to be sold for the benefit of our sick and wounded soldiers, were large, were munificent, but it was this tone of deep-seated earnestness which was largest. It was not merely what men and women said and did, but the *way* the thing was done, which carried with it this impression of wholesale generosity of spirit. Delicately wrought articles, such as usually adorn the tables of Fairs, the work of ladies' hands, were not wanting; but then the farmers from miles and miles around kept coming in with their wagons by twenties, and fifties, and hundreds, loaded down with their bulky farm produce; others came leading horses, or driving before them cows, or oxen, or mules, which they contributed instead of money, of which, perhaps, they had none; others brought live poultry which had been fed for months by the poor man's door; they brought this because they must bring something, and this was all they had. Some wagons were loaded from rich dairies, with butter and cheese by the ton. Then came great loads of hay from some distant farm, followed by others just as large from farms farther off. The mechanics brought their machines, and gave them in, one after another;—mowing machines, reapers, threshing machines, planters, pumps, fanning-mills—until a new building, a great storehouse, had to be erected to receive them; and here were ploughs, and stoves, and furnaces, and mill-stones, and nails by the hundred kegs, and wagons, and carriage springs,—and axes, and plate glass, and huge plates of wrought iron, (one the largest that was ever rolled from any rolling-mill in the world,) block tin and enameled leather, hides, boxes of stationery, and cases of boots, cologne by the barrel, native wine in casks, purified coal-oil by the thousand gallons—a mountain howitzer, a steel breech-loading cannon, a steam-engine made by the working-men in one of the manufactories of engines in Chicago—and on it this inscription—"This engine is donated by the workmen of the Eagle Works

Manufacturing Co., every man contributing something—not one Copperhead in the whole institution." There, too, were other machines which had been built by employees of various establishments, who had worked "after hours" to construct something for the Soldiers' Fair. Such, with a thousand other gifts, great and small, filled this new storehouse, where liberal purchasers were found waiting. Then, again, the carpenters, and joiners, who, in the press of work upon unfinished buildings, could not leave their hammer and saw to go to the Fair, joined together by tens and twenties, and set apart a day of which they would give their earnings to the soldiers. In like manner, different firms would advertise a sale for the benefit of the Fair. Thus,

"To the Loyal Stone-Masons of Chicago. We propose to donate to the Northwestern Sanitary Fair the entire proceeds of the sale of one canal boat load (20 tons) of our first-class rubble stone. Bids for the same will be received at our office till Friday next." Signed ———, &c.

Then loaded wagons came in long processions, toiling into the city, from far-off country places, bearing marks of frontier service, and the horses or mules, together with the drivers themselves, most of them told of wear. Many of them were sun-burnt men, with hard hands and rigid features; and a careless observer would have said that there was surely nothing in those wagons, as they passed, to awaken any sentiment. Yet something there was about it all which brought tears to the eyes of hundreds as the old farmers with their heavy loads toiled by.

Surgeon General Hammond has co-operated as have most of the volunteer surgeons and some of the regular army surgeons in this work, and the medical profession in general throughout the country has identified itself with it. The subject is not foreign to a medical journal. The spirit thus awakened may, when the war is ended, be turned to the relief of that class of sick poor, future soldiers and citizens, whose wants in this city and throughout the country are most inadequately provided for and who stand almost as much as the soldiers in need of medical and surgical care when disabled. To make known these wants, to aid in forming associations for their relief, in building hospitals, is the duty and legitimate office of the physician, for which he can in no better

way prepare himself than by active aid to the "Sanitary Commission," and by which he can most effectually add to the usefulness and honor of the profession.

The Surgeon General.—During the progress of the present sanguinary struggle, no department of our vast organization to crush the rebellion has been regarded by an intelligent and thoughtful people, with more anxiety than the medical; and its progress and augmenting efficiency have been watched by the medical profession throughout the country with a nervous interest. The necessity to the army of a well organized medical staff was fully appreciated long ago. Says Xenophon, "The great Cyrus never failed to take a certain number of excellent physicians along with him in the army, rewarding them very liberally, and treating them with particular regard. And in this he only followed a custom that had been anciently established by their generals." From the earliest times medical men have not only rendered invaluable service to the army as physicians, but they have frequently signalized themselves on the field as military leaders. "Podalirius and Machaon both commanded troops at the siege of Troy. They were no less excellent physicians than brave officers, and rendered as much service to the Greeks by their skill in medicine as they did by their courage and conduct in their military capacity." And a similar statement may be made of the representatives of the medical profession in every great military campaign from that time down to our own great conflict for the preservation of the country. And yet there is a feeling prevalent, not confined to the medical profession, that the medical element in our present war has not been fully appreciated, or treated with proper consideration. A large share of the malignity against the profession having its origin with those who would favor quackery, in some one or other of its many forms, has been directed against the head of the Medical

Department of the Army, Surgeon General Hammond. Malfeasance, with other charges, has been urged against that officer. Of the justness of this charge we know nothing, and express no opinion, and can only hope that the Surgeon General, in compliance with his own request for an investigation, may have an impartial trial.

We consider the question of his competency for the position as already answered,

1st. By what he has accomplished in rendering the medical organization efficient, the following brief extract from a London cotemporary expresses our views, and shows how a disinterested party regards him:

"Appointed by the President, in spite of the old routine custom, over the heads of many seniors, he came to his task full of vigor, in the prime of life, and capable of great physical endurance. With a bold hand he surrounded himself with trustworthy subordinates, displacing many whom he did not think equal to the crisis, and proceeded energetically with his work. Large armies had to be provided for, a system of military hospitals to be organized, the examining boards to be reconstructed, and an army medical school and museum to be founded. Well, in these vast and useful works he seems to have succeeded beyond all expectation, and the confidence of the public in the new system of medical organization has been warmly expressed, and yet by the last accounts we learn that he has been suspended from his office, and ordered to a distant service, a commission having been appointed to inquire into the condition and management of his office."

2d. By the fact that the department has been well supplied with medical stores and appliances, in every emergency, so far as human prescience could anticipate the demand.

3d. By the fact that our army, though raised in the higher latitudes and has been on duty in the malarious districts of the South, has not suffered from the prevalence of fatal epidemics, such as have decimated the armies of all nations, under similar circumstances. And we cheerfully append the Address of the U. S. Sanitary Commission to the President, as the testimony of men whose opinions should have weight:

U. S. SANITARY COMMISSION.

To his Excellency the President of the United States:

SIR:—The United States Sanitary Commission authorized by the Government to act as a Commission of inquiry and Advice in respect to the sanitary interests of the national forces, have been for more than two years and a half close and careful students of the medical and hygienic affairs of the army. They ought to be, they are thought by the people of the United States to be, they claim to be, better acquainted with the working of the Medical Department, whose deficiencies, mistakes, and necessities, it is their solemn duty to discover and obviate, than any other responsible body of witnesses. Trusting in their discretion, zeal, and works, the people of the loyal States have made them their almoners, to the extent of seven millions of dollars' worth of sanitary stores, and a million of dollars in money. The disbursement of this immense charity has brought our agents into close and continual contact with the Medical Department, of whose steady and rapid improvement from the imperfect state in which we found it, to its present degree of surprising and gratifying efficiency, we are able to lend a most indisputable testimony. We attribute this immense improvement to the fact that for two years the Medical Department has been directed by Dr. W. A. HAMMOND, Surgeon General, a man known to all impartial and competent judges, as thoroughly scientific, highly endorsed, large-minded, and an energetic and controlling administrator. He was selected for his office, solely for fitness, and in our calm and deliberate judgment, his administration has more than justified all the high hope and expectations of those who recommended him for the place.

We hear from sources that do not permit us to doubt the fact, that cautious but systematic efforts are now making to remove Surgeon General HAMMOND from office. In the name of some millions of constituents, in the name of the homes of this country, whose solicitude, liberality, and watchfulness, we represent, we respectfully and conscientiously protest against the secret tribunal, and the indirect methods, by which the good fame of the Surgeon General has been already seriously, and we believe unjustly, aspersed. We protest, in our character of experts, a body whose business it has been made to inquire and advise on this very subject, that the removal of Dr. HAMMOND would be as serious a blow, at the lives, comfort, and efficiency of the army, as the enemy itself could inflict;

that the science of the country, the humanity of its homes, and the army itself, would resent it as a cruel wrong and an alarming error; and we feel ourselves bound, in the interests of the soldiers in the field, and of those about to enter the service of the country, in the defence of our own principles and convictions, and in the name of the science, the charity, and the fair-mindedness of the nation, to beg that no further steps in this direction may be taken, without a full and fair trial of Surgeon General HAMMOND upon the charges alleged to have been secretly made against him.

Dec. 29, 1863.

Signed { H. W. BELLOWS, WM. H. VAN BUREN, WOLCOTT GIBBS, GEO. T. STRONG, C. R. AGNEW,

Standing Committee U. S. Sanitary Commission.

Pharmacy in South America.—The Pharmaceutical Association of Buenos Ayres has lately received the official recognition of the Argentine Government. It has also petitioned the Government for the formation of a School of Pharmacy at Buenos Ayres. The Society pledges itself to maintain an official journal of the Society. The journal is in the Spanish language and is published quarterly.

Physiological Action of Baryta and Oxalic Acid.—Dr. Onsum has communicated his researches in the toxical action of the Salts of Baryta and those of Oxalic Acid in *Virchow's Archiv.*, (vol. 28). From these he follows that they form the insoluble precipitates of Sulphate of Baryta and Oxalate of Lime, when they come in contact in the blood with a sulphate or a salt of lime, and that these precipitates obstruct the branches of the pulmonary arteries. Chemical analysis has, in all instances, proved their presence in the lungs, while they could not be discovered either in the brain, the spinal marrow, the kidneys, or the muscles.—*Druggists' Circular.*

Ligature of the Subclavian.—Dr. Armsby, of Albany, in November, ligated the subclavian artery. The ligature came away on the twenty-ninth day—on the FORTIETH day the patient was able to attend to business.

Inversion of the Uterus.—The reduction of an inverted uterus has been considered always a difficult operation. The history and result, given in the interesting article of Dr. Eaton, in the present number, leads to a different conclusion. We congratulate the Doctor on the success of his enterprise and tact.

Commencement in Rush Medical College.—The commencement exercises of the twenty-first annual course of lectures in Rush Medical College were held on Wednesday evening, the 27th ult., on which occasion seventy-nine gentlemen received the degree of Doctor of Medicine. Prof. Brainard, President of the Faculty, conferred the degrees, presenting each graduate with his diploma—after which he delivered a most instructive and pleasing valedictory address. We hope to have the pleasure of presenting it to the readers of the *Journal*, feeling sure its perusal would gratify the friends of the author, and of the College.

The course of lectures thus brought to so auspicious a close, has been more gratifying than any since the organization of the institution. In literary attainments and gentlemanly deportment, as well as in numbers, the class has been one of which the Faculty of any medical college might well be proud. The prospects of the College are brighter than its most sanguine friends, at the re-organization of the Faculty five years since, had dared to hope. And they would have been considered visionary if they had predicted that the twenty-first course would be attended by more than two hundred and fifty students, but this is the fact. As proof of the completeness of the course, and thoroughness of teaching,

we may refer to the uniform success, and honorable position of the alumni, who may be found occupying responsible places in every section of the country and in every division of the army. We subjoin the list of the graduating class:

NAMES.	SUBJECT OF THESIS.
Adkins Frank B.	The Human Skeleton.
Akely Harrison.	Treatment of Typhoid Fever.
Allen Orlenzer.	Digestion.
Avery Samuel J.	Version.
Babcock Lyman F.	Æration of the Blood.
Babcock Charles M.	Colic.
Bradbury William T.	Cholera Infantum.
Bibb George R.	Burns and Scalds.
Byrn Spencer.	Typhoid Fever.
Bacon A. J.	Diphtheria.
Beasley G. Frank.	Blood.
Bucher Charles A.	Chronic Diarrhœa.
Cass Frank D.	Remittent Fever.
Coakley James E.	Hœmorrhage.
Chamberlain Ellston.	———
Dayton Ephraim.	Syphilis.
Dora James W.	Congestive Continued Fever.
Dora F. Beauchamp.	Malaria.
Eells Franklin.	Pneumonia.
Egbert J. Wesley.	Malarious Disease.
English F. Edwin.	Pre-requisites to the Practice of Medicine.
Fares J. B.	Diphtheria.
Gaylord Horace.	Circulation of the Blood.
Glasener E. T.	Inguinal Hernia.
Goodwin Lewis H.	Dysentery.
Goldsbury J. A.	Diphtheria.
Hiatt J. Milton.	Gonorrhœa.
Hill Robert Lewis.	Gun Shot Wounds.
Hallingsworth H. C.	Inguinal Hernia.
Jordon Frank A.	Diphtheria.
Jones Erwin L.	Ovum and its Development.
Jones Augustus P. C.	Colo Rectitis.
Johnson I. C.	Dysentery.
Jennings George N.	Vis Medicatrix Natura.
Kelly John J.	Reflex Action of the Spinal Cord.
Keely Leslie E.	Management of Labor.
Kelso Robert S.	The Atmosphere.

Kerrell John R.....Obstetrics.
Kinnear A. H.....Incised Wounds.
Larimer Bartlett....Typhoid Fever.
Lester Gilbert B.....Diphtheria.
Linn Timothy T.....Management of the Sick Room.
Lowell Lorenzo Dow....Scarlatina.
Lyons J. Elles....Contagion.
Macdonald Peter S.....Intermittent Fever.
McGlumphy S. B ....Evidences of Gestation.
Marion Francis....Alcohol.
Mendenhall Samuel....The Incentives and Duties of the Medical Profession.
Mix Henry A.....Opium.
Munger Martin E.....Stone in the Bladder.
Munroe James A.....Signs of Pregnancy.
Moses Jabez H.....The Liver.
Nelson Alexander P.....Placenta Prævia.
Nelson Eugene L.....Medical Science, its Progress and Lessons.
O'Brien J. N.....Diarrhœa.
Palmer Roswell R.....Bilious Remittent Fever.
Peebles G. Hial....Menstruation.
Price Edward H.....Cause and Effect in their relation to Medical Science.
Richardson Charles M.....Circulation of the Blood.
Shaffer Philip....Typhoid Fever.
Schuchard George W.....Pernicious Fever.
Smith William A.....Ununited Fractures.
Still J. M.....Diphtheria.
Stillman J. Dwight....Physical and Chemical Action in Science.
Swift John M.....——
Thayer John W.....The Accoucheur.
Tevis Joel T.....Malarial Fever.
Waterhouse Marvin....Diphtheria.
West John M.....Malaria.
Welsh William F.....Diphtheria.
Wilson Samuel....Pneumonia.
Williams J. A.....Pathology of Fever.
White Charles A.....Classification of Medicine.
Watkins James M.....Intermittent Fever.
Wood Orlando S.....Anatomy and Physiology of the Liver.
Yerkes Titus P.....Signs of Pregnancy.

The *ad eundum* degree of M. D. was conferred on Charles White, M. D., and Frederick S. C. Grayston, M. D.

BOOK NOTICES AND REVIEWS.

A Report on Hospital Gangrene, Erysipelas and Pyæmia—As Observed in the Department of the Ohio and the Cumberland. With cases appended. By M. GOLDSMITH, Surgeon U. S. V. Louisville: Bradley & Gilbert, 1863. pp. 95.

This work is a valuable contribution to science, by a Surgeon of Volunteers. Its object is to show the value of Bromine in the treatment of Hospital Gangrene and Erysipelas. In this it is singularly successful.

The author was led to try this substance from the researches of Dr. Brainard on the effects of Iodine in snake bite and other poisonous wounds, but does not seem to be aware of his use of this remedy by infiltration in Erysipelas by injection into unhealthy suppurating cavities, etc., nor of the experiments of Reynoso on Bromine as an antidote to the woorara.

But to Dr. Goldsmith belongs the merit of using it in Hospital Gangrene and Erysipelas, whether in these diseases it is superior to Iodine further experience must determine. It is never volatile, and acts more energetically on the tissues, and cauterizes when injected into them.

The following are Dr. Goldsmith's directions for the use of Bromine:

1st. Give Chloroform if required.

2d. Remove all the sloughs with the scissors, so as to apply the pure Bromine upon the living tissues.

3d. It should be repeated if fetor remains.

The author advises a solution of his favorite remedy to be left standing in the wards to prevent infection.

The table on the following page gives the results of the treatment:

CONDENSED TABULAR STATEMENT OF CASES OF HOSPITAL GANGRENE.

	Whole number.	Recovered.	Died.	Amputations.	Average duration of treatment.	Percentage of deaths.
Treated with Bromine, in any way,	152	148	4	0	5 days and 14 hours	2.65
Treated with Bromine, pure, exclusively,	27	25	2	0	2 " " 23½ "	
Treated with Bromine, in solution, exclusively,	86	84	2	0	6 " " 11⅓ "	
Treated with Bromine, pure, after the solution failed,	8	8	0	0	12 " " 18 "	
Treated with Bromine, after Nitric Acid had failed,	23	22	0	1	3 " " 16⅓ "	
Treated with Bromine, after other remedies failed,	8	8	0	0	3 " " 4 "	
Treated with Nitric Acid exclusively,	13	5	8	0	3 " " 14₂.₅ "	61.54 } 50
Treated with other remedies exclusively,	13	7	5	1	7 " " 13₅.₇ "	38.47 }
Treated with other remedies after Bromine had failed,	4	4	0	0		

This table, it will be seen, shows a result which the author does not seem to have noticed, viz: that the average results of cases treated by the solution are more favorable than those treated by pure Bromine, being 1 death in 32 of the former, and 1 in 13½ in the latter.

The results, however, are sufficiently favorable in either way to excite the admiration of any one at all acquainted with the history of Hospital Gangrene, so much so as to lead to the question whether it is the same disease.

Dr. McLeod states that the patients in his wards in the Crimea never lived over sixteen hours after the attack. The French removed their wounded early to the Bosphorous, and sixty bodies were thrown overboard from one transport ship during a passage of thirty-eight hours. The disease in the French hospitals "attacked not only open wounds, but cicatrices, and nearly every stump."

Delpech describes it as being fatal in a few hours, while Dr. Goldsmith gives the average duration of treatment, by all methods, as from three to twelve days.

We must, therefore, conclude that the disease, if it has appeared at all in our military hospitals, from which emanate these reports, has only done so in its mildest form, and in a way so closely resembling Erysipelas as scarcely to be distinguished from it. It may be added that in none of our armies has the mortality compared with that of European troops making campaigns in warm climates, a fact which speaks well for the medical department of the service, and may be due also, in some degree, to the agency of the Sanitary Commission, in furnishing supplies of fresh vegetables and other useful articles.

The following are the author's views of the method of employing his medicine in Erysipelas:

"In treating cases of Erysipelas with Bromine, the following rules are commonly followed:

1st. The face, for example, being the part affected, the parts are to be washed in soap and water, so as to remove all sebaceous matter, and then sponged in clean water.

2d. A mask of patent lint is to be prepared, large enough to cover and extend three inches beyond the erysipelatous area, and in this a ⊥ shaped incision is to be made for the accommodation of the mouth and nose.

3d. Another piece of lint, the exact counterpart of the first.

4th. A piece of oiled silk, large enough to cover the face and head, with a like ⊥ incision.

5th. Two pieces of lint large enough to cover the eye-lids are to be smeared with simple cerate and placed over the eyes.

6th. The first mask of lint is to be placed over the face.

7th. The second mask is to be wetted in the following solution: ℞—Bromine, ʒj; Bromide of Potassium, gr. xxx; Water, ℥ x.—M.—and placed over the first mask.

8th. The oiled silk is now to be quickly placed over the face and secured by a roller; the object being to cause the vapor of the Bromine to come in a dry state in contact with the skin. Some surgeons prefer the use of the solution directly upon the skin.

9th. The application should be renewed once in four hours until the disease subsides.

Sometimes the above formula proves irritating. In that case the strength of the solution must be reduced by the addition of water."

The results are most favorable, the deaths being, in cases treated with Bromine topically and with vapor in the wards, not more than about five per cent.

Synopsis of Lectures on Materia Medica and Pharmacy, delivered in the University of Pennsylvania, with Three Lectures on the *Modus Operandi* of Medicines. By JOSEPH CARSON, M. D. Third edition, revised. 8vo., pp. 244. Philadelphia: Blanchard & Lea, 1863.

This book is an outline of the course of lectures delivered by the author in the University of Pennsylvania. The synopsis evinces that the course is well arranged and complete. To be valuable to the members of the class, the outline thus given, should be filled up by the student, as the lectures are given. The three lectures on the *modus operandi* of medicines which are appended, are most ingeniously and carefully drawn up, and, in the present state of physiological science, may be received as correct.

The Nervous and Vascular Connection between the Mother and Fœtus in Utero. By John O'Reilly, M. D., F. R. C. S., I. New York: Printed by Robert Craighead, 1864.

From the author. Shall be noticed in the next number.

Journals Received.—The American Journal of Medical Sciences, (quarterly); Medical and Surgical Reporter, (weekly); Pacific Medical and Surgical Journal; Medical News & Library; The Journal of Ophthalmology; American Medical Times, (weekly); Medical Examiner; Boston Medical and Surgical Journal, (weekly); Canada Lancet; London Lancet; Buffalo Medical and Surgical Journal; Dental Register; People's Dental Journal; Cincinnati Lancet and Observer; The American Exchange and Review; American Journal of Insanity; Braithwaite's Retrospect for January, 1864.

OBITUARY NOTICES.

Dr. C. H. Cleveland, of Cincinnati, a former contributor to this journal, died in the city of Memphis, on the 1st of December last, of Congestive Pneumonia, aged 45 years.

Dr. C. was well known to the profession by his valuable contributions to the journals—and as the author of several medical works. For a year past he was in charge of the Government Hospitals at Memphis. He was industrious and energetic. By his death the army has lost an efficient officer—the profession an industrious and useful member.

John C. Dalton, M. D., of Lowell, Mass. The medical profession of Massachusetts, and to a certain extent, that of the whole country, have met with a great loss in the death of John C. Dalton, M. D., of Lowell, who died on Saturday, January 9th, 1864, in the sixty-ninth year of his age. Very few medical men who have not been connected with medical teaching or authorship have made themselves more generally known, and still fewer have been as highly esteemed as Dr. Dalton. He was, indeed, the type of *the medical gentleman*, honorable in character, courteous in manners, of integrity that no man doubted or could doubt; amiable and affectionate in all the relations of life. Such men the medical profession can ill spare.

"Peace to a good man's memory."

—*American Medical Times.*